Sphincter repair: its present place

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Faecal incontinence has become a condition of interest only in the last 30 years. In 1970 at St Mark’s Hospital, there were four admissions and over the next 20 years this had risen to 55 per year. Today faecal incontinence forms a significant part of colorectal practice. The original approach in the 1970s over a 20 year period was sphincter repair. Gynaecologists and general surgeons had for many years been occupied in the reconstruction of the anal sphincter after localised traumatic injury. In the 1970s, diffuse weakness of the pelvic floor was identified and characterised by neuromuscular histology to show evidence of denervation.

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CAUSES OF INCONTINENCE

The causes of incontinence have now been classified. They include colorectal conditions resulting in diarrhoea and faecal urgency, congenital disorders, functional disorders and anal sphincter weakness. Clinical and physiological studies have subdivided the last of these into two broad categories including diffuse weakness of the pelvic floor and localised lacerated trauma. These often overlap in the same patient. The majority of patients have had an obstetric injury. The minority have experienced anal surgery usually for fistula or civilian or military trauma.

MANAGEMENT

The present management options for the treatment of faecal incontinence include medical management, sphincter repair, artificial sphincter reconstruction, sacral nerve stimulation and colostomy. Outcomes of these various treatments are now able to be assessed reasonably objectively by continence scoring systems. These take into account severity, the frequency of incontinent episodes and the social incapacity that the symptom confers on the patient.

SPHINCTER REPAIR

Sphincter repair operations for lacerated trauma were carried out in great numbers during the 1980s and 1990s. The overall assessment of results indicated that 60-80% of patients had continence restored. An important analysis of long term outcome reported a group of patients who had an assessment of outcome after sphincter repair at a median of 15 months and at a subsequent median follow-up of 77 months. An initial 80% improvement in symptoms fell to 50% during the period of follow-up. This was closely related to the patients’ rating of improvement. Thus at 77 months, overall patient satisfaction was 50%. A quarter of the group was not improved and another quarter was satisfied to a certain degree. This information resulted in a reaction away from sphincter repair. It can be said however that a 50% patient satisfaction rate at six years or more is a very reasonable outcome for a low cost, low technology procedure.

It is probable that about 20% of patients who undergo sphincter repair in the numerous centres reporting their results received the operation because it was the only treatment option at that time. Thus case selection in some cases was poor and it is no surprise therefore that the outcome was disappointing in those patients. One interpretation of these results is that sphincter repair gives a poor outcome. Another interpretation is that with better case selection, it gives a good result. Operations for diffuse weakness of the pelvic floor such as post anal repair give a long term relief rate of about 30% at five years. This is also a low technology procedure but owing to the introduction of new approaches to incontinence, the operation has largely died out.

ARTIFICIAL SPHINCTERS

Part passu artificial sphincters were developed during the late 1980s and 1990s. These took two forms. The first was dynamic graciloplasty, the second the artificial bowel sphincter (ABS) prosthesis. There is now consider-
able information on these and the outcomes are remarkably similar. In a comparison of 123 patients having dynamic graciloplasty (Medtronic) and 112 patients having an ABS (Acticom AMS), morbidity was 74% and 88% respectively. Re-operation rates were 40% and 46%. Overall functional success for dynamic graciloplasty ranged from 45-73%.6,7,8 For ABS this was 60%6 and 53%.8

REPEAT SPHINCTER REPAIR

No doubt some of the patients referred for artificial sphincter might have been amenable to a repeat sphincter repair. This approach has been carried out and of a series of 26 patients selected for a repeat repair, about 50% were restored to adequate function.9 A follow-up of these patients at five years10 demonstrated that the initial improvement was maintained in the long term. Thus a repeat sphincter repair in selected cases can offer long term satisfaction.

SACRAL NERVE STIMULATION

The introduction of sacral nerve stimulation (Medtronic) has transformed the management of faecal incontinence. From the initial report of Matzel11 to further evaluation12,13 sacral nerve stimulation has been analysed in detail. As a generalisation, about 80% of patients undergoing peripheral nerve evaluation (PNE) go on to have a permanent implant. Of these about 85-90% have a satisfactory outcome. The patients are carefully selected and all will have had to undertake a period of behavioural (biofeedback) treatment. In the most recent report14 37 patients from eight centres were treated. Of these 34 underwent a permanent implant. Continence episodes per week fell from a median of 16.4 to 2 at three years. There was a significant reduction of urgency from 80% unable to hold for one minute to 75% able to hold for more than 10 minutes at a follow up of three years.

Recently, a small group of patients with a localised sphincter injury treated with sacral nerve stimulation without further repair has been described15. Of seven patients, all improved during PNS and the results in the five receiving a permanent implant were encouraging. Sacral nerve stimulation is, however, a high technology procedure which is costly. These data are of short term follow-up (1-6 mo). It is unlikely therefore that sacral nerve stimulation will become the first line treatment in the management of patients with a localised laceration.

COLOSTOMY

The value of colostomy should not be underestimated. It can liberate the patient and in the appropriately selected case it can greatly enhance quality of life. The operation should be done by an experienced surgeon since the patient must live with the stoma indefinitely. Siting and good technique are essential.

THE PRESENT PLACE OF SPHINCTER REPAIR

The present position regarding incontinence can be given in an algorithm which distinguishes between two broad groups of patients. The first includes those with an intact sphincter ring. The second includes those with a localised disruption of the sphincter ring. In the latter a sphincter repair should be advised. Of those who fail, a proportion will be suitable for a repeat sphincter repair. Overall this will result in about 60% of all patients being satisfied by sphincter repair at an intermediate follow-up of five years or more.

Those patients having a sphincter repair which fails, would then join the group of patients with an intact sphincter ring. These should be managed medically if possible. If this is not successful, then sacral nerve stimulation should be the prime treatment. Patients are not suitable for sacral nerve stimulation if the anal canal anatomy is lost, or if the PNE is not successful or where there is no intact neuro-muscular axis as would be the case in patients with spinal nerve injury. In these an artificial sphincter procedure should be carried out.

CONCLUSION

Sphincter repair must be regarded as the first line treatment for incontinent patients with lacerated injury resulting in disruption of the anal ring. With proper case selection, adequate intermediate term results of 5-10 years can be achieved in 60-70% of patients. This may be either through primary repair or a repeat repair in selected patients.

BIBLIOGRAPHY


